What is claimed is:

1. A method of assisting GPS position determination comprising:

receiving ephemeris information for a GPS satellite over a datalink;

receiving updated almanac information for a GPS satellite over a datalink;

based on the received updated almanac information and GPS parity algorithms, reconstructing data bits of the GPS signal;

based on the current time, synchronizing the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view;

subtracting the reconstructed data bits from the received GPS signal at the synchronized time;

coherently integrating the received GPS signal over the time period corresponding to the reconstructed data bits to obtain a GPS pseudo-range measurement; and

determining the GPS receiver position using the generated, synchronized pseudo-range measurement and the ephemeris information received over the datalink.

2. The method as claimed in claim 1, wherein the datalink is a one-to-many broadcast.

3. The method as claimed in claim 1, wherein the information received over the datalink is formatted for transmission over the datalink.

4. The method as claimed in claim 1, wherein the step of reconstructing data bits reconstructs 240 contiguous data bits.

5. The method as claimed in claim 4, wherein the contiguous data bits are words 3 through 10 of sub-frame 5 of the GPS signal.

6. The method as claimed in claim 4, wherein the contiguous data bits are words 3 through 10 of sub-frame 4 of the GPS signal.

7. The method as claimed in claim 1, wherein the subtracting step removes a plurality of bits of data from the received GPS signal.

8. The method as claimed in claim 1, wherein the subtracting step removes a plurality of seconds of data from the received GPS signal.

9. The method as claimed in claim 1, wherein the step of coherently integrating is performed for more than one satellite.

10. The method as claimed in claim 1, wherein the received ephemeris information is received from a periodic broadcast.

11. The method as claimed in claim 10, wherein the periodic ephemeris broadcast is broadcast at least once per hour.

12. The method as claimed in claim 1, wherein the received almanac information is received from a periodic broadcast.

13. The method as claimed in claim 12, wherein the periodic almanac broadcast is broadcast at least once per 24 hours.

14. The method as claimed in claim 1, further comprising the steps of:

storing the reconstructed data bits of the GPS signal; and

subsequent to storing the reconstructed data bits, performing the synchronizing, subtracting, integrating, and determining steps using the stored reconstructed data bits.

15. A method of assisting GPS position determination comprising:

receiving ephemeris information for a GPS satellite currently in view from a GPS signal transmitted by the GPS satellite at a GPS receiver;

receiving almanac information for a GPS satellite from a GPS signal transmitted by the GPS satellite at a GPS receiver;

after receipt of ephemeris information and almanac information, moving the GPS receiver to a covered environment;

based on the received almanac information, ephemeris information, and GPS parity algorithms, reconstructing data bits of the GPS signal;

based on the current time, synchronizing the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view;

subtracting the reconstructed data bits from the received GPS signal at the synchronized time;

coherently integrating the received GPS signal over the time period corresponding to the reconstructed data bits to obtain a GPS pseudo-range measurement; and

determining the GPS receiver position using the generated, synchronized pseudo-range measurements and the received ephemeris information.

16. The method as claimed in claim 15, wherein the step of reconstructing data bits reconstructs 240 contiguous data bits.

17. The method as claimed in claim 16, wherein the contiguous data bits are words 3 through 10 of sub-frame 5 of the GPS signal.

18. The method as claimed in claim 16, wherein the contiguous data bits are words 3 through 10 of sub-frame 4 of the GPS signal.

19. The method as claimed in claim 15, wherein the subtracting step removes a plurality of bits of data from the received GPS signal.

20. The method as claimed in claim 15, wherein the subtracting step removes a plurality of seconds of data from the received GPS signal.

21. The method as claimed in claim 15, wherein the step of coherently integrating is performed for more than one satellite.

22. A computer system for assisting GPS position determination comprising:

one or more processors for receiving and transmitting data; and

a memory coupled to said one or more processors, said memory having stored therein received ephemeris information and updated almanac information for a GPS satellite over a datalink, GPS parity algorithms, and sequences of instructions which, when executed by one of said one or more processors, cause one of said one or more processors to reconstruct data bits of the GPS signal based on the stored almanac information and GPS parity algorithms, synchronize the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view based on the current time, subtract the reconstructed data bits from the received GPS signal at the synchronized time, coherently integrate the received GPS signal over the time period corresponding to the reconstructed data bits to obtain a GPS pseudo-range measurement, and determine a position using the generated, synchronized pseudo-range measurement and the stored ephemeris information.

23. The computer system as claimed in claim 22, wherein the data bits reconstructed comprise 240 contiguous data bits.

24. The computer system as claimed in claim 22, wherein the received ephemeris information is received from a periodic broadcast.

25. The computer system as claimed in claim 24, wherein the periodic ephemeris broadcast is broadcast at least once per hour.

26. The computer system as claimed in claim 22, wherein the received almanac information is received from a periodic broadcast.

27. The computer system as claimed in claim 26, wherein the periodic almanac broadcast is broadcast at least once per 24 hours.

28. A computer system for assisting GPS position determination comprising:

one or more processors for receiving and transmitting data; and

a memory coupled to said one or more processors, said memory having stored therein received ephemeris information and updated almanac information for a GPS satellite from a GPS signal transmitted by the GPS satellite, GPS parity algorithms, and sequences of instructions which, when executed by one of said one or more processors after determining that the computer system is in a covered environment, cause one of said one or more processors to reconstruct data bits of the GPS signal based on the stored almanac information, ephemeris information, and GPS parity algorithms, synchronize the reconstructed data bits with the time of reception of a GPS signal from a satellite currently in view based on the current time, subtract the reconstructed data bits from the received GPS signal at the synchronized time, coherently integrate the received GPS signal over the time period corresponding to the reconstructed data bits to obtain a GPS pseudo-range measurement, and determine a position using the generated, synchronized pseudo-range measurement and the stored ephemeris information.

29. The computer system as claimed in claim 28, wherein the data bits reconstructed comprise 240 contiguous data bits.

30. A computer system for assisting GPS position determination, the system comprising:

a processor for receiving and transmitting data; and

a memory coupled to said processor, said memory having stored therein received ephemeris information and updated almanac information for a GPS satellite from a GPS signal transmitted by the GPS satellite and sequences of instructions which, when executed by said processor, cause said processor to determine if a strong GPS signal is received or if a weak or no GPS signal is received, if a strong GPS signal is

received said processor generates a fix and updates time, position, ephemeris, and almanac information, and if a weak or no GPS signal is received, said processor reads the stored received ephemeris information, updated almanac information, and stored received time and position information to generate a fix.

31. The computer system of claim 30, wherein the instructions further include instructions which, when executed by said processor, cause said processor to periodically determine the GPS signal strength.